EIC Search

MRY

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=> fil reg
FILE 'REGISTRY' ENTERED AT 16:33:40 ON 04 AUG 2008
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STRUCTURE FILE UPDATES:    3 AUG 2008  HIGHEST RN 1038266-69-1
DICTIONARY FILE UPDATES:   3 AUG 2008  HIGHEST RN 1038266-69-1

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

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on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

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L3              STR
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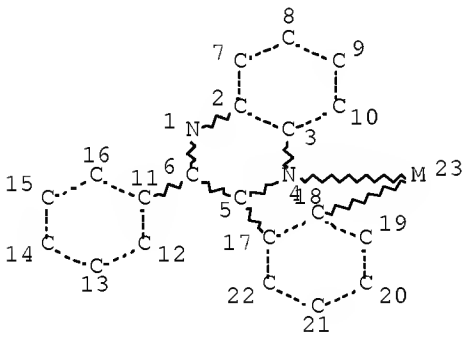


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DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
L5           89 SEA FILE=REGISTRY SSS FUL L3

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SEARCH TIME: 00.00.01
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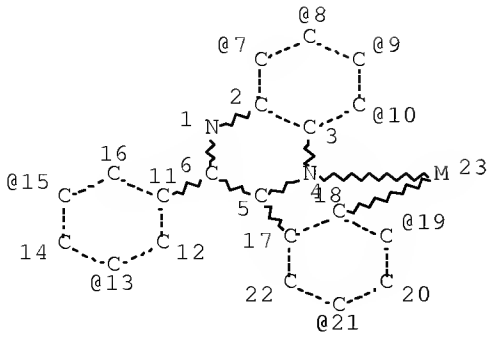


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VPA 25-19/21 U
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DEFAULT MLEVEL IS ATOM
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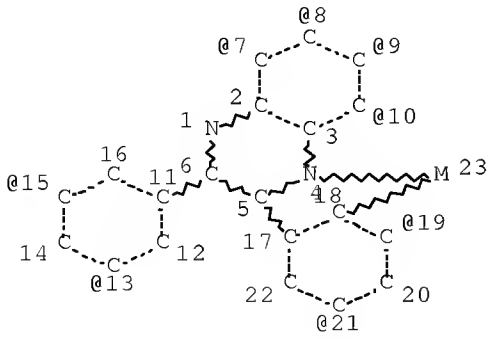


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NODE ATTRIBUTES:
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DEFAULT MLEVEL IS ATOM
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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STEREO ATTRIBUTES: NONE

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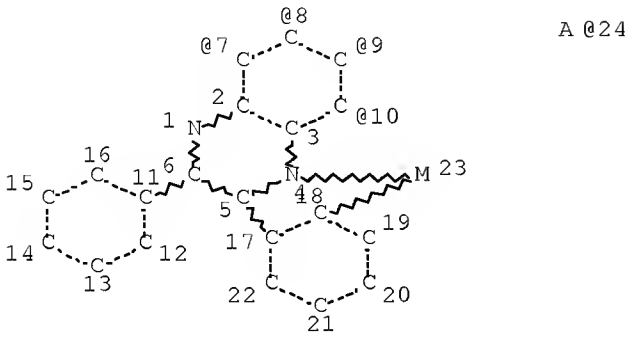

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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

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(FILE 'HOME' ENTERED AT 16:15:14 ON 04 AUG 2008)

FILE 'HCAPLUS' ENTERED AT 16:15:25 ON 04 AUG 2008
E US20070241667/PN
L1 1 S E3
SEL RN

FILE 'REGISTRY' ENTERED AT 16:15:49 ON 04 AUG 2008
L2 26 S E1-26

FILE 'LREGISTRY' ENTERED AT 16:17:12 ON 04 AUG 2008
L3 STR

FILE 'REGISTRY' ENTERED AT 16:20:48 ON 04 AUG 2008
L4 6 S L3
L5 89 S L3 FUL
L6 8 S L2 AND L5
SAV L5 YAM703/A

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L10           0 S L9 SSS SAM SUB=L5

     FILE 'HCAPLUS' ENTERED AT 16:31:06 ON 04 AUG 2008
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L12          14 S L11 AND (PY<=2004 OR PRY<=2004 OR AY<=2004)
L13          27 S L11 NOT L12



=> fil hcap
FILE 'HCAPLUS' ENTERED AT 16:34:19 ON 04 AUG 2008
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FILE COVERS 1907 - 4 Aug 2008  VOL 149 ISS 6
FILE LAST UPDATED: 3 Aug 2008  (20080803/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d l12 ibib abs hitstr hitind 1-14

L12  ANSWER 1 OF 14  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2006:991036  HCAPLUS  Full-text
DOCUMENT NUMBER:          145:497301
TITLE:                    Organic light emitting diode containing a novel
                          Ir complex as a red color phosphorescent emitter
INVENTOR(S):              Chi, Yun; Chou, Pi-Tai; Kavitha, Jakka; Song,
                          Yi-Hwa; Chen, Hsing-Yi
PATENT ASSIGNEE(S):       National Tsing Hua University, Taiwan
SOURCE:                   Taiwan., 4pp.
                          CODEN: TWXXA5
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:
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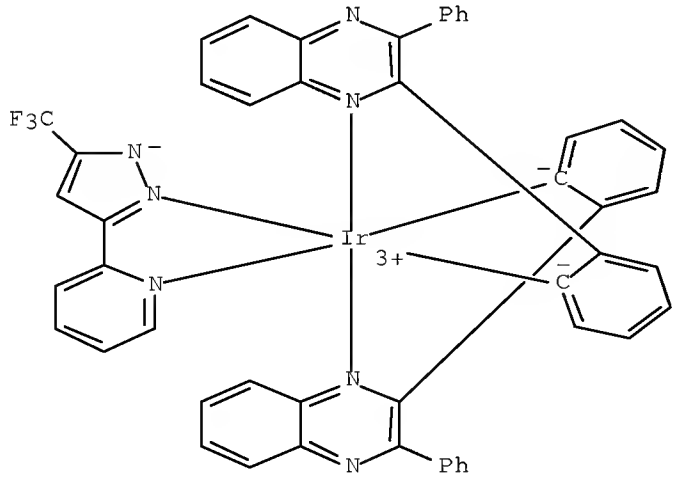
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
TW 231157	B	20050411	TW 2004-93117691	20040618
PRIORITY APPLN. INFO.:			TW 2004-93117691	20040618

AB This invention provides a systematic method for syntheses of new electroluminescent iridium metal complexes by introducing chelating ligands such as quinoxaline, quinazoline, and pyrimidine. For utilization of quinoxaline, quinazoline or pyrimidine ligands, the strategy of substituting the carbon atom with the highly electroneg. nitrogen atom or extending the delocalization of pi electrons on the chelating aromatic chromophores can not only enhance the rigidity of the ligands and suppress the non-radiative decay, but also alter the electronic structures of the coordinating ligands. As a result, the energy gaps between the HOMO and LUMO orbitals, i.e. the energy gaps of IL (pipi*) or MLCT transitions are significantly reduced, shifting the emission wavelengths to the region of saturated red color. These phosphorescent complexes can be used as the emitting or emitter dopant materials to fabricate the high efficiency OLEDs for various types of future, flat panel display applications.

IT 848889-89-4 848889-92-9 848889-94-1 848889-96-3
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(organic light emitting diode containing novel Ir complex as red color phosphorescent emitter)

RN 848889-89-4 HCAPLUS

CN Iridium, bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC][2-[5-(trifluoromethyl)-1H-pyrazol-3-yl-κN2]pyridinato-κN]-, (OC-6-14)- (CA INDEX NAME)



RN 848889-92-9 HCAPLUS

CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-

κN1]phenyl-κC][2-[5-(trifluoromethyl)-1H-pyrazol-3-yl-κN2]pyridinato-κN]-, (OC-6-14)- (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 848889-94-1 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC][2-[5-(trifluoromethyl)-1H-1,2,4-triazol-3-yl-κN2]pyridinato-κN]-, (OC-6-14)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 848889-96-3 HCAPLUS
CN Iridium, [2-[3-(1,1-dimethylethyl)-1H-pyrazol-5-yl-κN1]pyridinato-κN]bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]-, (OC-6-14)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM H05B033-14
ICS C09K011-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 848889-89-4 848889-92-9 848889-94-1
848889-96-3 866941-02-8 866941-03-9 866941-05-1
914771-93-0
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(organic light emitting diode containing novel Ir complex as red color phosphorescent emitter)

L12 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:579425 HCAPLUS Full-text
DOCUMENT NUMBER: 145:249355
TITLE: Organometallic complexes as electroluminescent devices and light-emitting components
INVENTOR(S): Inoue, Eiko; Shimogaki, Tomoko; Seo, Tetsuji
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 55 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1781912	A	20060607	CN 2005-10128999	200512 05
			<--	
US 20060159955	A1	20060720	US 2005-274327	200511 16
			<--	
JP 2006182775	A	20060713	JP 2005-348632	200512 02

PRIORITY APPLN. INFO.: JP 2004-352077 A 200412 03

OTHER SOURCE(S): MARPAT 145:249355

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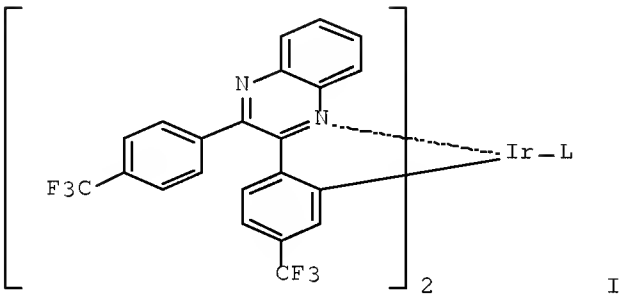


I

AB This invention relates to an organometallic complex as shown in formula I, where L is single anion ligand containing β-diketone structure, single anion bidentate chelate complex containing carboxy, or single anion bidentate chelating ligands. This invention also relates to electroluminescent devices comprises the mentioned organometallic complexes, a light-emitting component layers, light-emitting substance and sensitizer of fluorescent compound

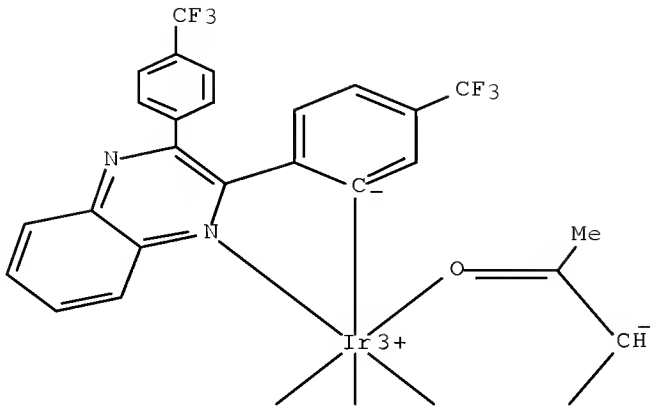
IT 906369-47-9P 906369-49-1P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of organoiridium complexes as electroluminescent device and phosphorescent light emitting component)

RN 906369-47-9 HCAPLUS

CN Iridium, (2,4-pentanedionato-κO2,κO4)bis[5-(trifluoromethyl)-2-[3-[4-(trifluoromethyl)phenyl]-2-quinoxalinyl-κN1]phenyl-κC]- (CA INDEX NAME)

PAGE 1-A



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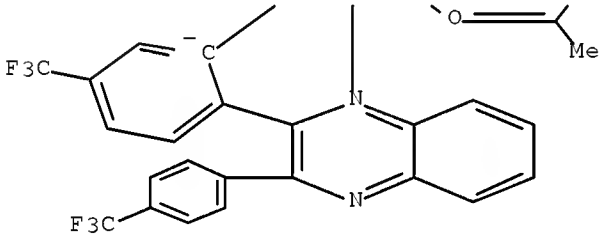
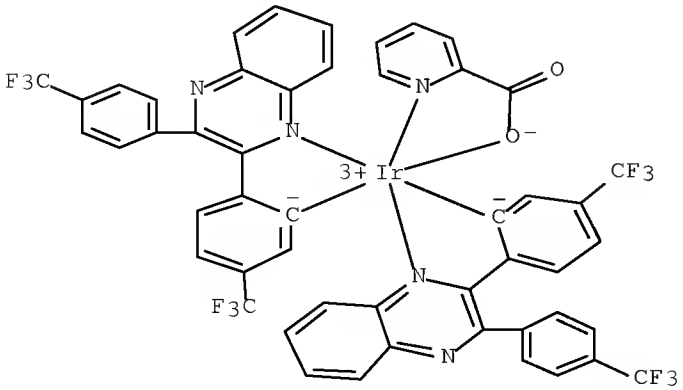


RN 906369-49-1 HCAPLUS

CN Iridium, (2-pyridinecarboxylato-κN1,κO2)bis[5-(trifluoromethyl)-2-[3-[4-(trifluoromethyl)phenyl]-2-quinoxalinyl-κN1]phenyl-κC]- (9CI) (CA INDEX NAME)



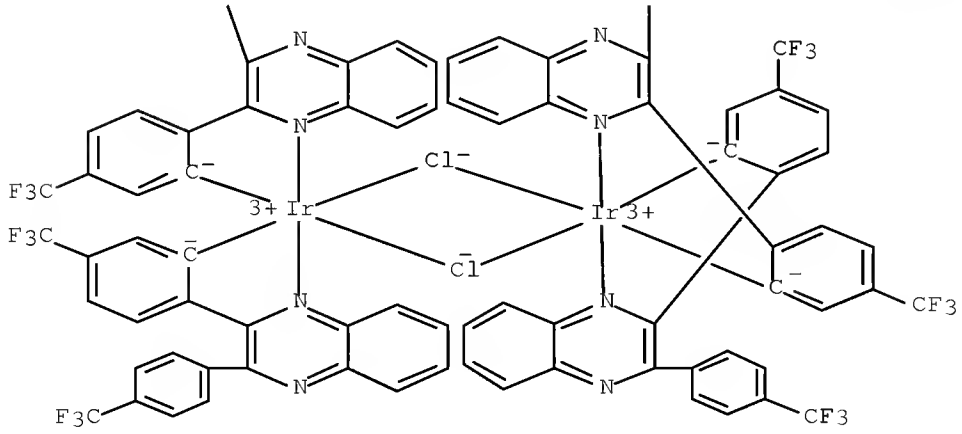
IT 906369-48-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reactant for preparation of organoiridium complexes as electroluminescent device and phosphorescent light emitting component)

RN 906369-48-0 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[5-(trifluoromethyl)-2-[3-[4-(trifluoromethyl)phenyl]-2-quinoxalinyl-κN1]phenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 73

IT 906369-47-9P 906369-49-1P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation of organoiridium complexes as electroluminescent device and phosphorescent light emitting component)

IT 73790-20-2P 906369-46-8P 906369-48-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reactant for preparation of organoiridium complexes as electroluminescent device and phosphorescent light emitting component)

L12 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:578149 HCAPLUS Full-text
DOCUMENT NUMBER: 145:46196
TITLE: Organometallic complex, and light-emitting element and light-emitting device using the same
INVENTOR(S): Inoue, Hideko; Shitagaki, Satoko; Seo, Satoshi
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: PCT Int. Appl., 84 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006062144	A1	20060615	WO 2005-JP22507 <--	200512 01
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2006188491	A	20060720	JP 2005-348466 <--	200512 01
US 20080113216	A1	20080515	US 2007-792424 <--	200706 06

PRIORITY APPLN. INFO.:	JP 2004-353587	A	200412 07
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	WO 2005-JP22507	W	200512 01

OTHER SOURCE(S): CASREACT 145:46196; MARPAT 145:46196
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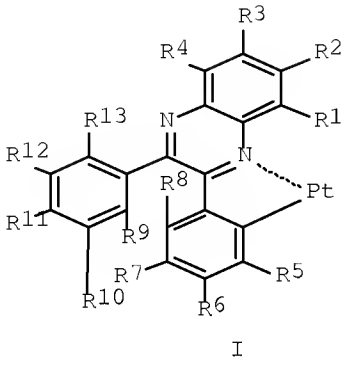


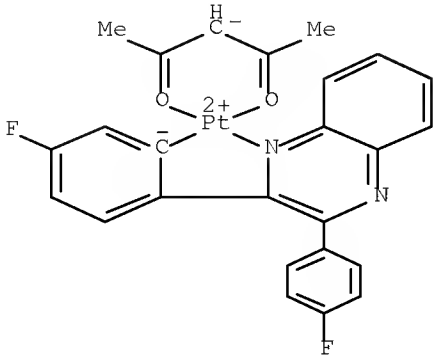
I

AB It is an object of the present invention to provide a substance capable of emitting phosphorescence. In addition, it is an object of the present invention to provide a light-emitting element that is excellent in chromaticity. One aspect of the present invention is preparation of organometallic complex I (R1-R4 = H, halo, acyl, alkyl, alkoxyl, aryl, cyano, heterocyclic; R5-R13 = H, acyl, alkyl, alkoxyl, aryl, heterocyclic, electron-withdrawing group). Thus, reaction of 2,3-bis(4-fluorophenyl)quinoxaline (preparation given) with K2[PtCl4] in refluxing 2-ethoxyethanol/H2O followed by treatment with acetylacetone gave title compound, (acetylacetonato)[2,3-bis(4- fluorophenyl)quinoxalinato]platinum(II). An organometallic complex having such a structure can emit phosphorescence with higher emission intensity.

IT 889869-73-2P 889869-74-3P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of cyclopatinated fluorophenyl quinoxaline organometallic complex and their use as light-emitting element and light-emitting device)

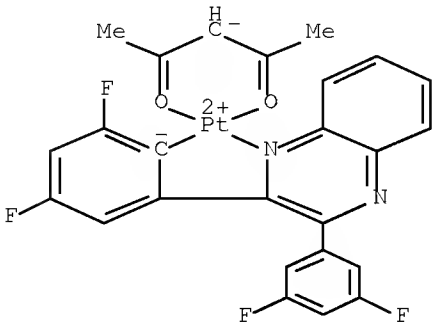
RN 889869-73-2 HCAPLUS

CN Platinum, [5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO,κO')-, (SP-4-3)- (9CI) (CA INDEX NAME)



RN 889869-74-3 HCAPLUS

CN Platinum, [2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC](2,4-pentanedionato-κO,κO')-, (SP-4-3)- (9CI) (CA INDEX NAME)



IT 889869-72-1P

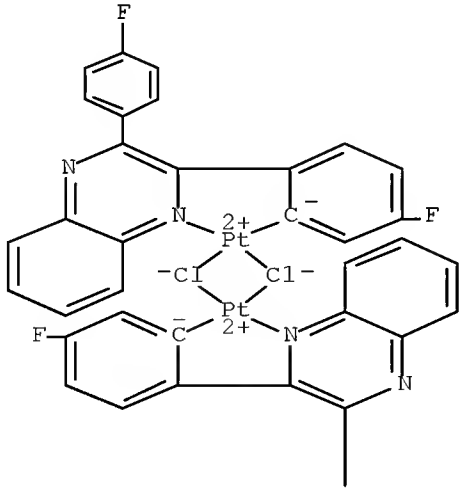
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of cyclopatinated fluorophenyl quinoxaline organometallic complex and their use as light-emitting element and light-emitting device)

RN 889869-72-1 HCAPLUS

CN Platinum, di-μ-chlorobis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A



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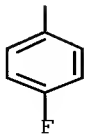

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 73
IT 889869-73-2P 889869-74-3P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of cyclopatinated fluorophenyl quinoxaline organometallic complex and their use as light-emitting element and light-emitting device)
IT 148186-43-0P, 2,3-Bis(4-fluorophenyl)quinoxaline 223707-22-0P
870136-70-2P 889869-72-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cyclopatinated fluorophenyl quinoxaline organometallic complex and their use as light-emitting element and light-emitting device)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:564313 HCAPLUS Full-text
DOCUMENT NUMBER: 145:53427
TITLE: Group 9 or 10 metal complexes, electroluminescent devices having layer containing them, and use of the devices
INVENTOR(S): Inoue, Eiko; Seo, Satoshi; Shimogaki, Tomoko; Abe, Hiroko
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 67 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006151887	A	20060615	JP 2004-346234 <--	200411 30
PRIORITY APPLN. INFO.:			JP 2004-346234 <--	200411 30

OTHER SOURCE(S): MARPAT 145:53427
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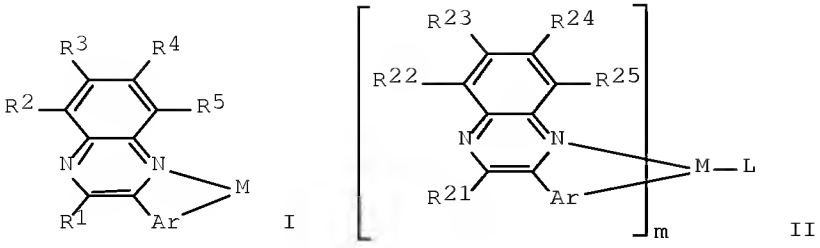


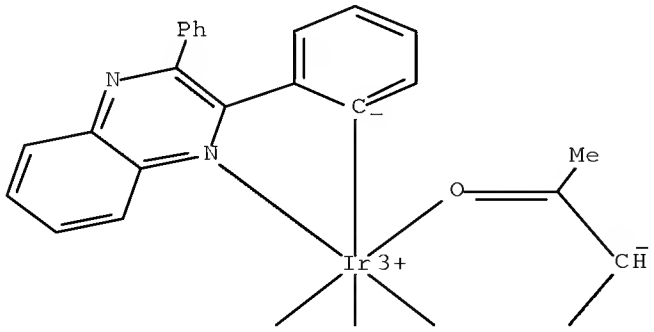
AB The complexes are represented by I (R1-R5 = H, halo, acyl, alkyl, alkoxy, aryl, cyano, heterocyclyl; Ar = aryl, heterocyclyl; M = group 9 or 10 element) or II (R21-R25 = any group given for R1-R5; Ar, M = same as above; n = 1 when M = group 10 element or 2 when M = group 9 element; L = monoanionic ligand having β-diketone structure, monoanionic bidentate ligand containing carboxy group or phenolic OH). Also claimed are electroluminescent apparatus having the electroluminescent devices and electronic instruments having the apparatus in the display. I or II emit phosphorescence and are also useful as sensitizers for fluorescent compds.

IT 848127-98-0P 853994-39-5P 870245-89-9P
870245-91-3P 870245-92-4P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of group 9 or 10 metal arylquinoxaline complexes emitting phosphorescence and electroluminescent devices using them)

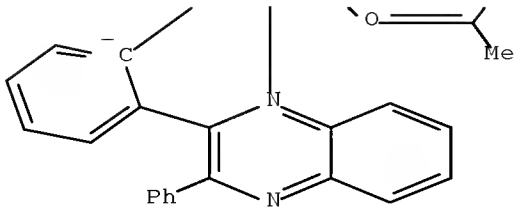
RN 848127-98-0 HCAPLUS

CN Iridium, (2,4-pentanedionato-κO,κO')bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A

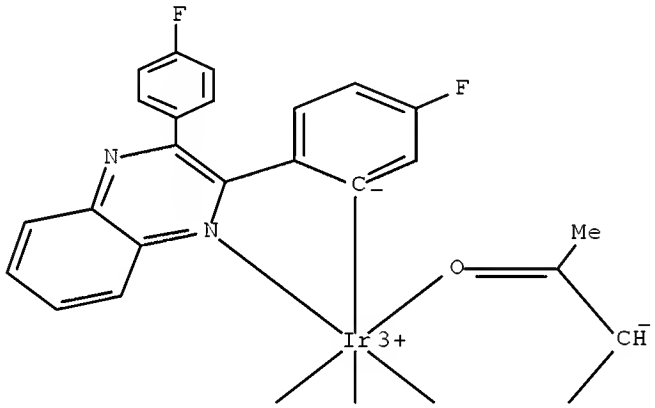


PAGE 2-A



RN 853994-39-5 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO2,κO4)- (CA INDEX NAME)

PAGE 1-A



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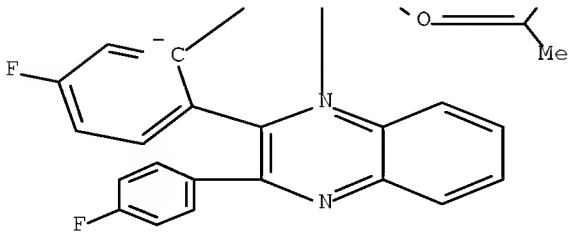
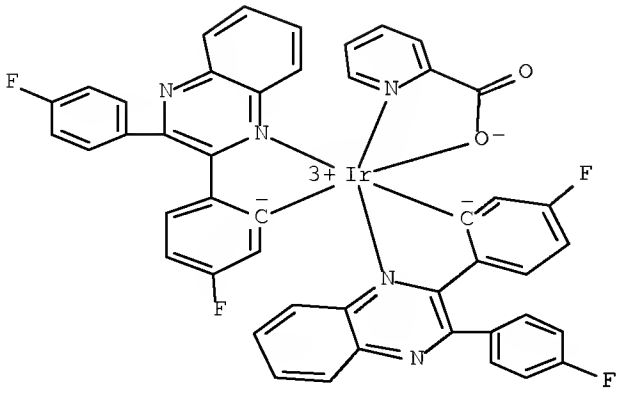


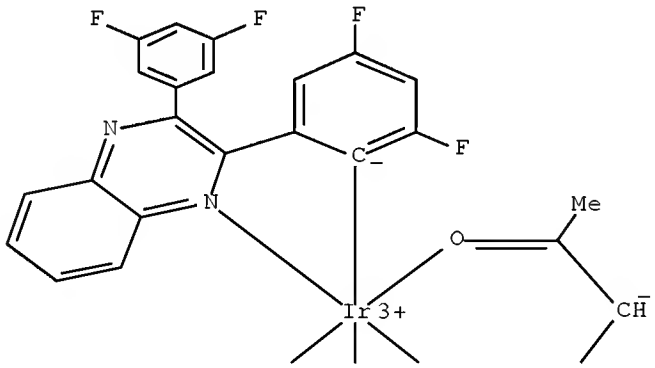
RN 870245-89-9 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2-pyridinecarboxylato-κN1,κO2)- (9CI) (CA INDEX NAME)



RN 870245-91-3 HCAPLUS

CN Iridium, bis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC](2,4-pentanedionato-κO,κO')-(9CI) (CA INDEX NAME)

PAGE 1-A



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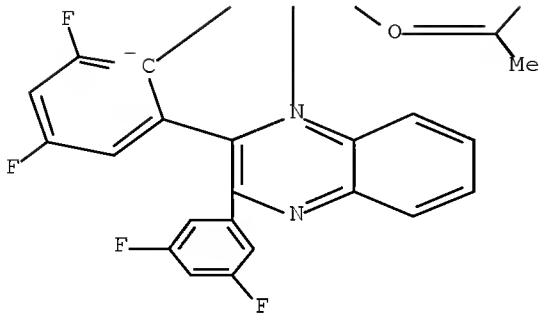
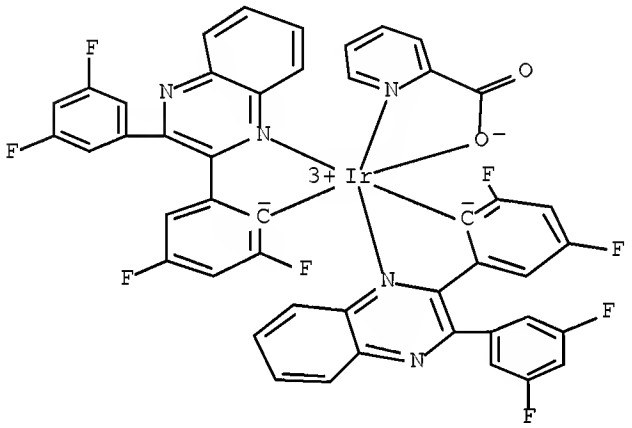


RN 870245-92-4 HCAPLUS

CN Iridium, bis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC](2-pyridinecarboxylato-κN1,κO2)- (9CI) (CA INDEX NAME)



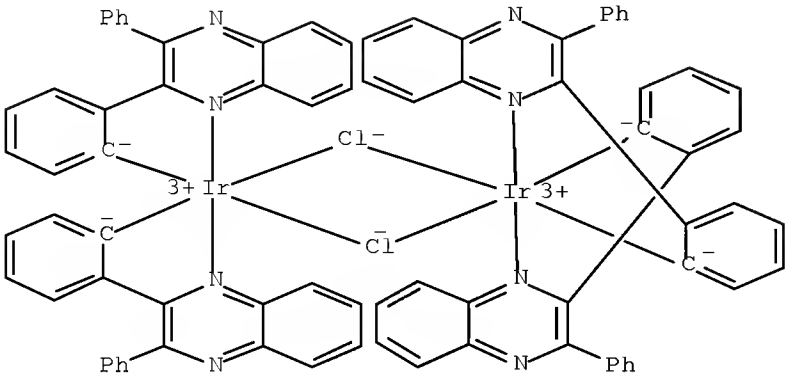
IT 848127-97-9P 848889-99-6P 870245-90-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of group 9 or 10 metal arylquinoxaline complexes emitting phosphorescence and electroluminescent devices using them)

RN 848127-97-9 HCAPLUS

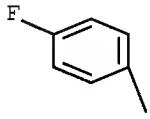
CN Iridium, di-μ-chlorotetrakis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (CA INDEX NAME)

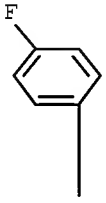


RN 848889-99-6 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (CA INDEX NAME)

PAGE 1-A





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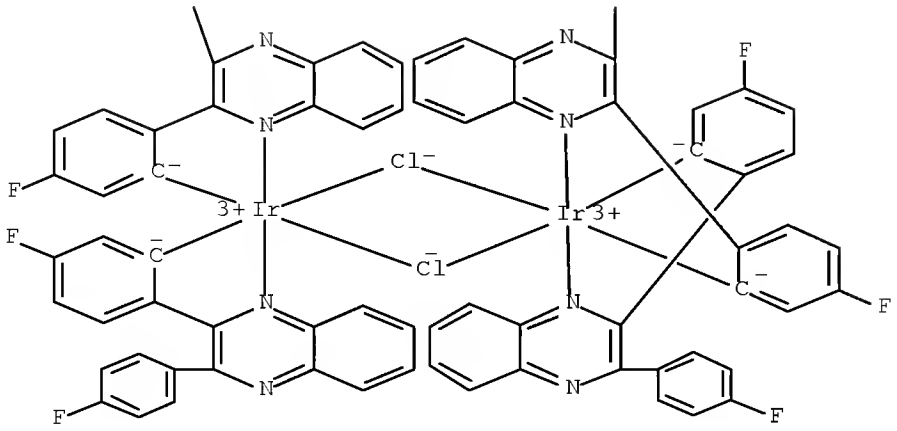
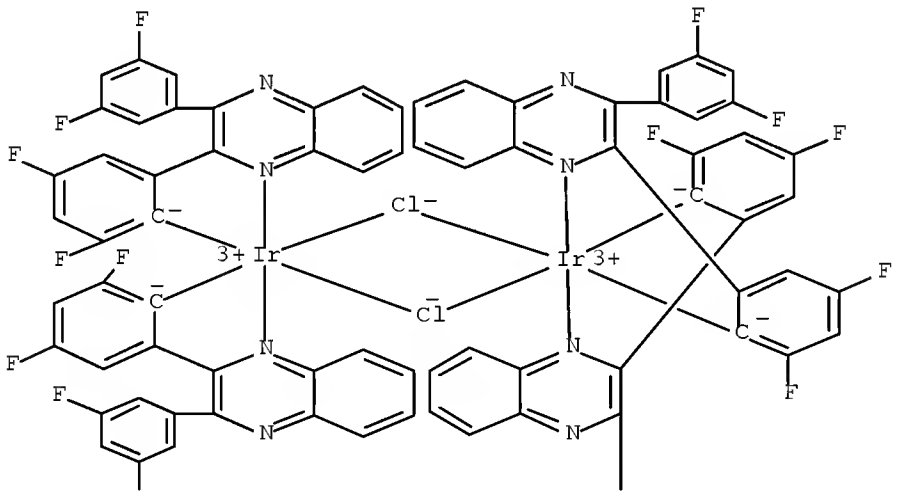


RN 870245-90-2 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 29

IT 848127-98-0P 853994-39-5P 870245-89-9P
870245-91-3P 870245-92-4P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of group 9 or 10 metal arylquinoxaline complexes emitting phosphorescence and electroluminescent devices using them)

IT 19802-70-1P 148186-43-0P, 2,3-Bis(4-fluorophenyl)quinoxaline
223707-22-0P 787640-67-9P 848127-97-9P
848889-99-6P 870136-70-2P 870245-90-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of group 9 or 10 metal arylquinoxaline complexes emitting phosphorescence and electroluminescent devices using them)

L12 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1262621 HCAPLUS Full-text
DOCUMENT NUMBER: 144:29490
TITLE: Light emitting element and light emitting device
INVENTOR(S): Ohsawa, Nobuharu; Abe, Hiroko; Inoue, Hideko; Shitagaki, Satoko; Seo, Satoshi
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: PCT Int. Appl., 196 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005115061	A1	20051201	WO 2005-JP9310	200505 17
			<--	
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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1749424	A1	20070207	EP 2005-740951	200505 17
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R: DE, FI, FR, GB, NL				
CN 1957645	A	20070502	CN 2005-80016049	200505 17
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JP 2006073992	A	20060316	JP 2005-147413	200505 19

US 20070241667	A1	20071018	US 2006-590703 <--	20060825
KR 2007015605	A	20070205	KR 2006-725371 <--	20061201
JP 2007314541	A	20071206	JP 2007-146489 <--	20070601

PRIORITY APPLN. INFO.:

JP 2004-151035 <--	A	20040520
JP 2004-226382 <--	A	20040803
JP 2004-231742 <--	A	20040806
WO 2005-JP9310 <--	W	20050517
JP 2005-147413	A3	20050519

OTHER SOURCE(S): MARPAT 144:29490

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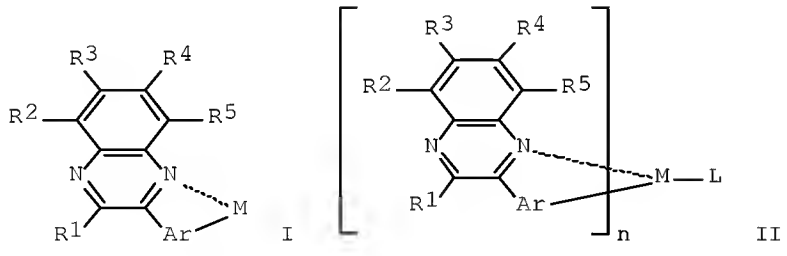


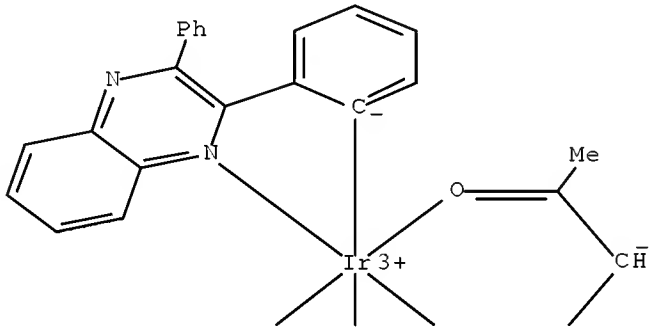
AB Light-emitting elements comprising a pair of electrodes (an anode and a cathode) wit a light-emitting layer between them are described in which the light-emitting layer includes an organometallic complex described by the general formulas I or II (R1-5 = H, halo, acyl, alkyl, alkoxyl, aryl, cyano, and/or heterocyclic groups; Ar = an aryl group having an electron-withdrawing group or a heterocyclic group having an electron-withdrawing group; M = a Group 9 or Group 10 element; n = 2 if M = Group 9 element; n = 1 if M = Group 10 element; and L = anionic ligand) and a compound that has a larger energy gap than the organometallic complex or a compound that has a larger ionization

potential and a smaller electron affinity than the organometallic complex. Light-emitting devices using the light-emitting elements are also described.

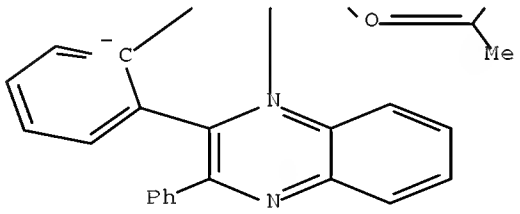
IT 848127-98-0P 853994-39-5P 870245-89-9P
870245-91-3P 870245-92-4P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(light-emitting elements employing organometallic compds.)

RN 848127-98-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-κO,κO')bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A

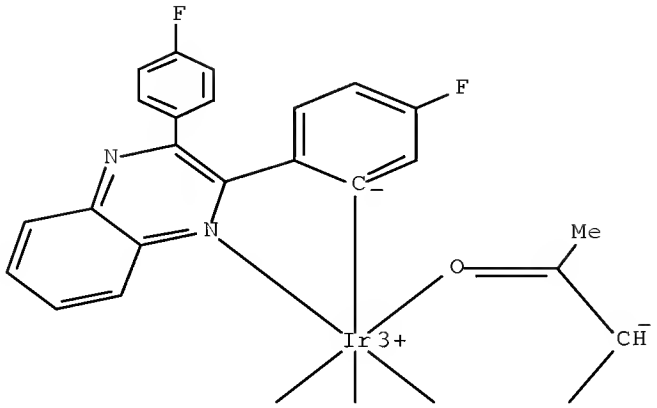


PAGE 2-A

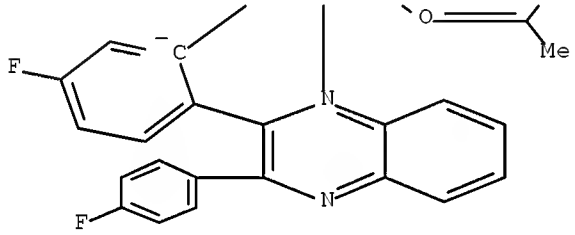


RN 853994-39-5 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO2,κO4)-
(CA INDEX NAME)

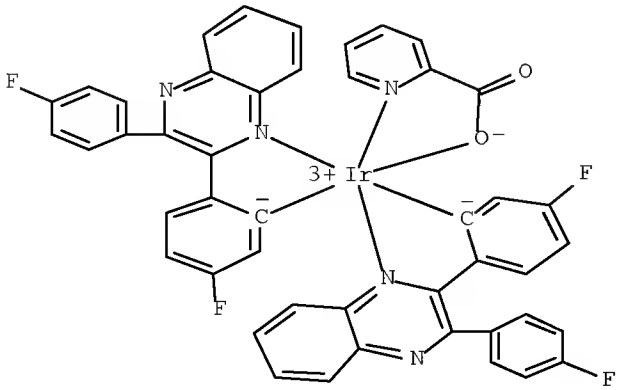
PAGE 1-A



PAGE 2-A



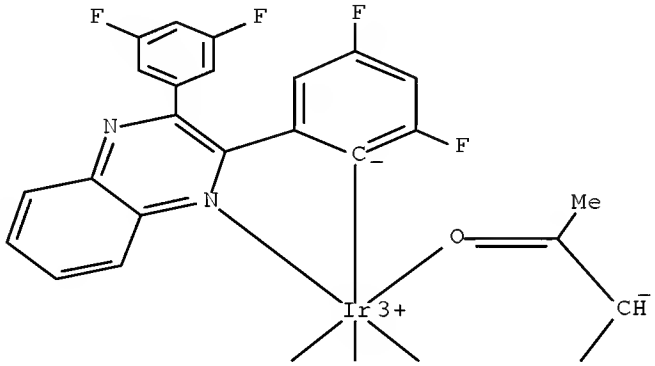
RN 870245-89-9 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2-pyridinecarboxylato-κN1,κO2)- (9CI) (CA INDEX NAME)



RN 870245-91-3 HCAPLUS

CN Iridium, bis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC](2,4-pentanedionato-κO,κO')-(9CI) (CA INDEX NAME)

PAGE 1-A



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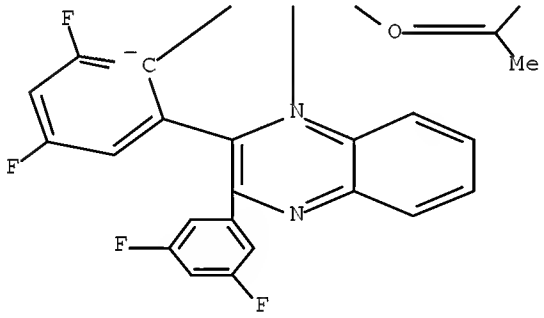
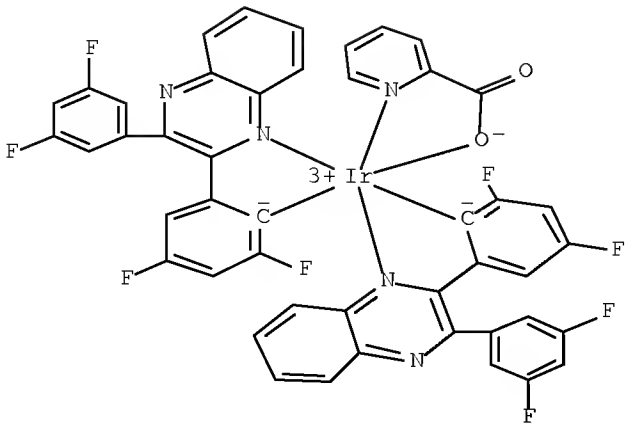
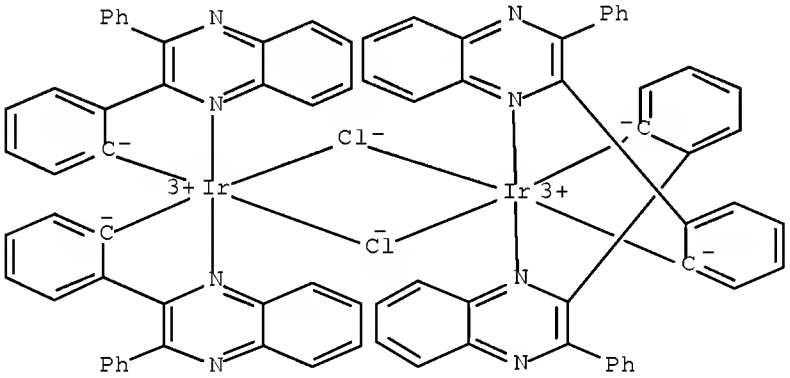


RN 870245-92-4 HCAPLUS

CN Iridium, bis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC](2-pyridinecarboxylato-κN1,κO2)-(9CI) (CA INDEX NAME)



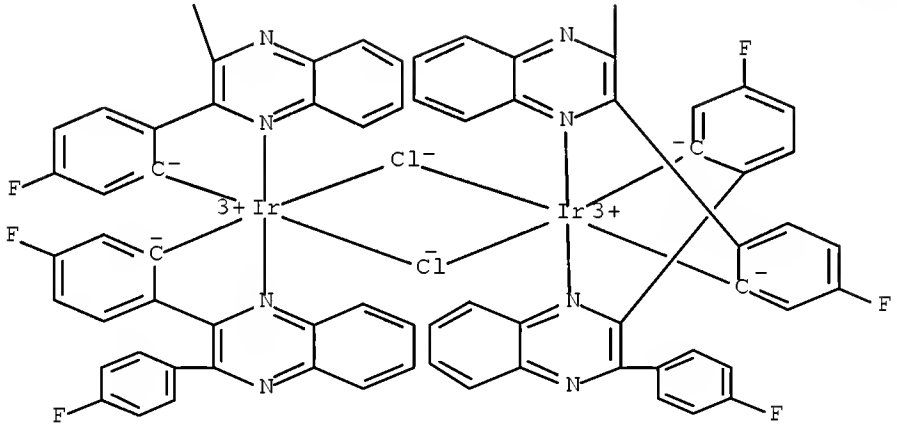
IT 848127-97-9P 848889-99-6P 870245-90-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(light-emitting elements employing organometallic compds.)
RN 848127-97-9 HCAPLUS
CN Iridium, di-μ-chlorotetrakis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (CA INDEX NAME)



RN 848889-99-6 HCAPLUS
CN Iridium, di-μ-chlorotetrakis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (CA INDEX NAME)

PAGE 1-A

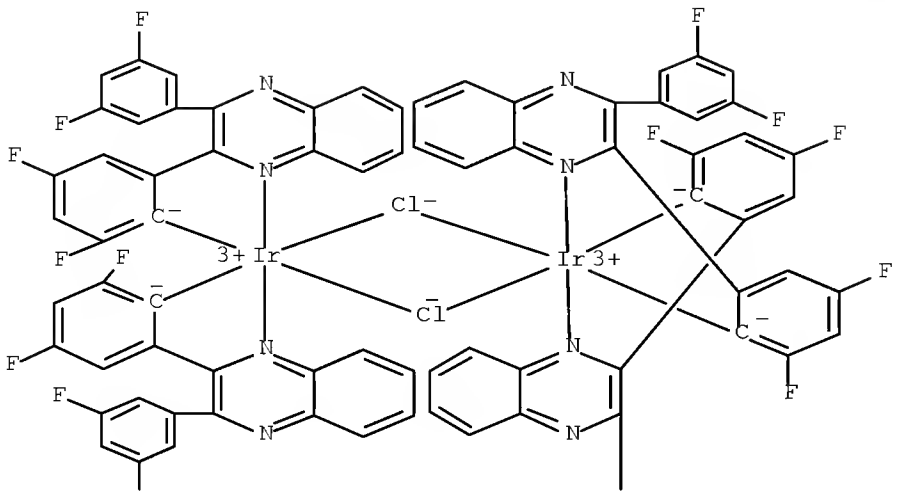
PAGE 2-A



RN 870245-90-2 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[2-[3-(3,5-difluorophenyl)-2-quinoxalinyl-κN1]-4,6-difluorophenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

IC ICM H05B033-14
ICS C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29, 76
IT 848127-98-0P 853994-39-5P 870245-89-9P
870245-91-3P 870245-92-4P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(light-emitting elements employing organometallic compds.)
IT 19802-70-1P 148186-43-0P, 2,3-Bis(4-fluorophenyl)quinoxaline
223707-22-0P 848127-97-9P 848889-99-6P
870136-70-2P 870245-90-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(light-emitting elements employing organometallic compds.)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1149648 HCAPLUS Full-text
DOCUMENT NUMBER: 143:422468
TITLE: Preparation of N-containing heterocycle-di(2-pyridyl)amine-iridium complexes and luminescent materials using them
INVENTOR(S): Konno, Hideo

PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science & Technology, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005298483	A	20051027	JP 2005-61293	20050304
			<--	
PRIORITY APPLN. INFO.:			JP 2004-76281 A	20040317
			<--	

OTHER SOURCE(S): MARPAT 143:422468
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title iridium complexes (I) [n = 0, 1; X1 = H, (un)substituted aryl, N-containing heterocyclyl; Z1, Z2, Y1, Q1 = a group of atoms necessary to form optionally substituted 5- or 6-membered ring optionally condensed to another ring; L1 = a single bond, a divalent group; Y1 = N or C atom; when Y1 is C atom, Q1 and Y1 are bonded to each other through a double bond; R1-R8 = H, substituent] are prepared by reaction of di(2-pyridyl)amine ligand (II) (R1-R8, n, X1 = same as above) with iridium chloride binuclear complexes (III) [Z3-Z6, Y2, Y3, Q2, Q3 = a group of atoms necessary to form optionally substituted 5- or 6-membered ring optionally condensed to another ring; L2, L3 = a single bond, a divalent group; when Y2 and Y3 are C atoms, the bond between C atom and Q3 and one between Q2 and Y2 are double bonds] under microwave irradiation These iridium complexes provide luminescent materials for luminescent devices with high brightness, high efficiency, and durability, materials for organic electroluminescent devices and electro-chemiluminescence (ECL) devices, luminescent sensors, photosensitizers, displays, fluorescent brighteners, photograph. materials, laser dyes, color filter dyes, optical communication, color conversion filter, back light, illumination, photosensitizing dyes, or various light sources. Thus, 200 mg bridged dimer (IV), 79 mg di(2-pyridyl)amine, and 25 mL 2-ethoxyethanol were added to a flask, irradiated in a microwave apparatus (Hitachi MR250) at 2,450 MHz for 15 min, cooled to room temperature, evaporated under reduced pressure to give a yellow solid which was dissolved in a mixture of ethanol and water, treated dropwise with a saturated aqueous solution of NH4PF6 to give, a yellow solid. The solid was recrystd. from CH2Cl2-hexane to give (2-phenylpyridine)[di(2-pyridyl)amine]iridium complex (V). A solution of V in THF showed strong green luminescence at λmax of 482 and 512 nm.

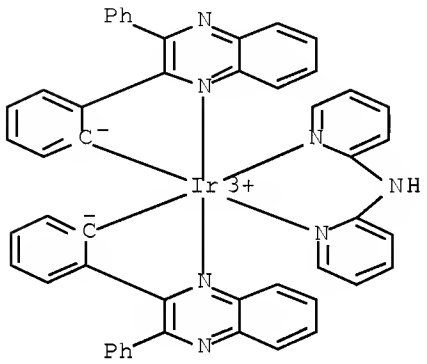
IT 868131-65-1P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of N-containing heterocycle-di(2-pyridyl)amine-iridium complexes as luminescent materials)

RN 868131-65-1 HCAPLUS

CN Iridium(1+), bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC][N-2-pyridinyl-2-pyridinamine-κN]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

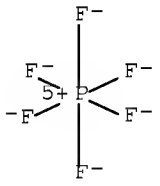
CM 1

CRN 868131-64-0
CMF C50 H35 Ir N7
CCI CCS



CM 2

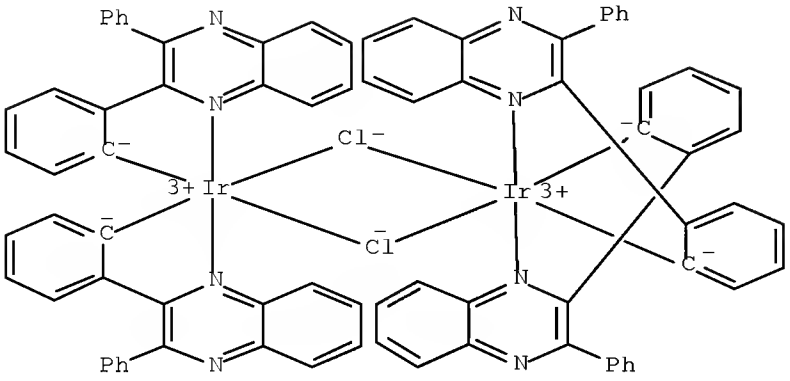
CRN 16919-18-9
CMF F6 P
CCI CCS



IT 848127-97-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-containing heterocycle-di(2-pyridyl)amine-iridium complexes as luminescent materials)

RN 848127-97-9 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (CA INDEX NAME)



IC ICM C07F015-00
ICS C09K011-06; H05B033-14
CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 76
IT 868131-25-3P 868131-27-5P 868131-29-7P 868131-31-1P
868131-33-3P 868131-35-5P 868131-37-7P 868131-39-9P
868131-41-3P 868131-43-5P 868131-45-7P 868131-47-9P
868131-49-1P 868131-51-5P 868131-53-7P 868131-54-8P
868131-56-0P 868131-58-2P 868131-59-3P 868131-61-7P
868131-63-9P 868131-65-1P 868131-67-3P 868131-69-5P
868131-71-9P 868131-73-1P 868131-75-3P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of N-containing heterocycle-di(2-pyridyl)amine-iridium complexes as luminescent materials)
IT 1202-34-2, Di(2-pyridyl)amine 6654-69-9, Bis(3-methyl-2-pyridyl)amine 10428-50-9, Tri(2-pyridyl)amine 14192-97-3, N,N-Di(2-pyridyl)phenylamine 57175-14-1 343978-72-3
391611-77-1 417705-49-8 435294-69-2 603109-48-4 632326-35-3
632327-35-6 632327-36-7 632327-37-8 760997-15-7 760997-17-9
848127-97-9 852609-81-5 861348-71-2,
N,N-Di(2-pyridyl)(2-hydroxyphenyl)amine 868131-76-4 868131-77-5
868131-78-6 868131-79-7 868131-80-0 868131-81-1 868131-82-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-containing heterocycle-di(2-pyridyl)amine-iridium complexes as luminescent materials)

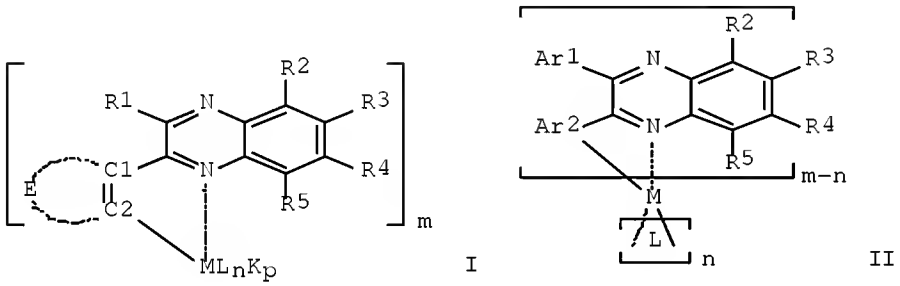
L12 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:963628 HCAPLUS Full-text
DOCUMENT NUMBER: 143:275296
TITLE: Organometallic compound containing quinoxaline structure and light emitting element
INVENTOR(S): Fujii, Hiroyuki; Hirao, Toshikazu; Sakurai, Hidehiro; Mao, Lisheng; Tani, Kazuyasu
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 20050191527	A1	20050901	US 2005-64123 <--	200502 23
JP 2005239648	A	20050908	JP 2004-52742 <--	200402 27
PRIORITY APPLN. INFO.:			JP 2004-52742 <--	A 200402 27

OTHER SOURCE(S): MARPAT 143:275296

GI



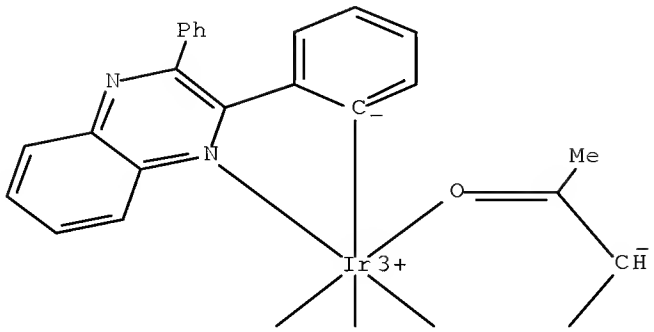
AB Organometallic compds. comprising a quinoxaline structure are described by the general formula I and II (M = a monovalent to trivalent metal; L and K = ligands; E = a cyclic structure, R1-5 = independently selected H or arbitrary substituents; Ar1-2 = independently selected (un)substituted aryl groups; m = 1-3; n = 0-3; n' = 0-2; p = 0-2; m + n + p = 2-5; and m - n' = 1-3). Light-emitting devices are also described which employ the compds.

IT 848127-98-0P 853994-39-5P
RL: DEV (Device component use); MOA (Modifier or additive use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)

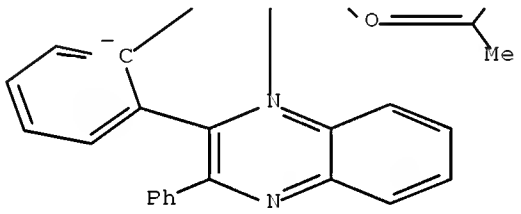
RN 848127-98-0 HCAPLUS

CN Iridium, (2,4-pentanedionato-κO,κO')bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



RN 853994-39-5 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO2,κO4)-
(CA INDEX NAME)

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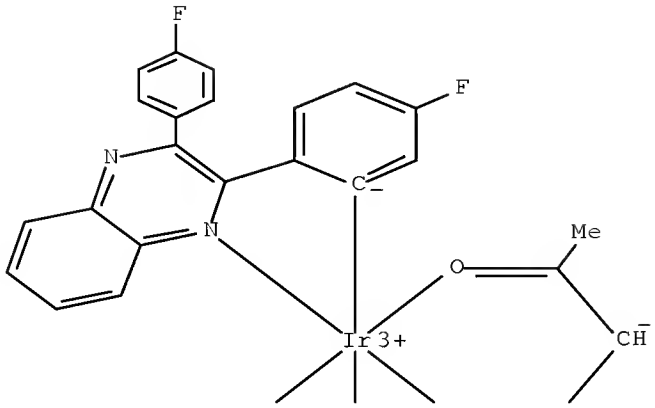

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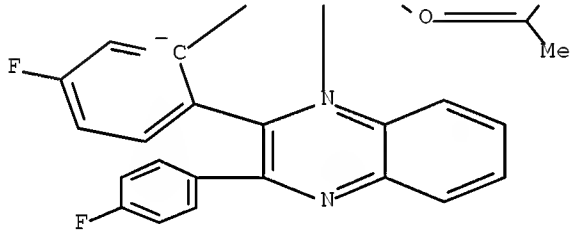
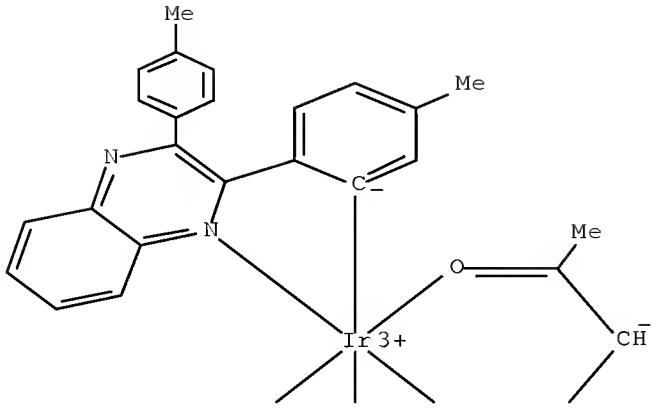


IT 863714-58-3P 863714-60-7P 863714-61-8P
863714-62-9P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)

RN 863714-58-3 HCAPLUS

CN Iridium, bis[5-methyl-2-[3-(4-methylphenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO,κO')-
(9CI) (CA INDEX NAME)

PAGE 1-A



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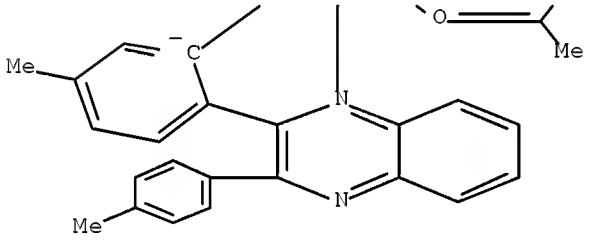

RN 863714-60-7 HCAPLUS
CN Iridium, bis[5-methoxy-2-[3-(4-methoxyphenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO,κO')-(9CI) (CA INDEX NAME)

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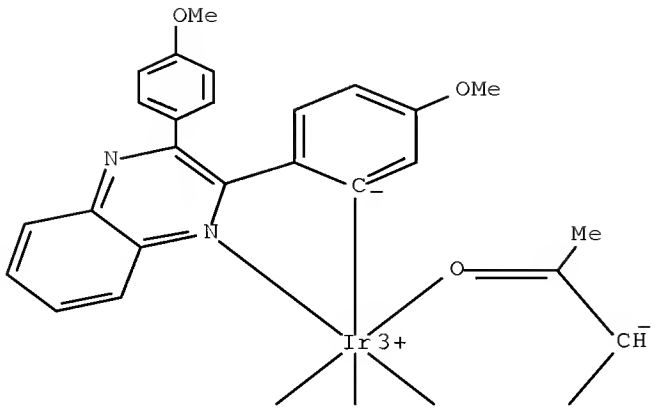

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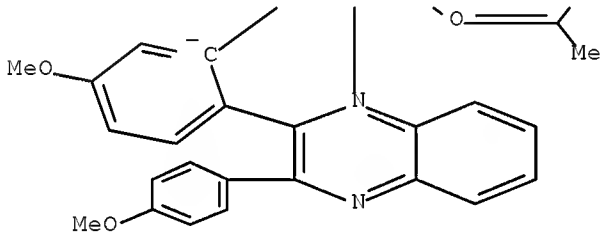
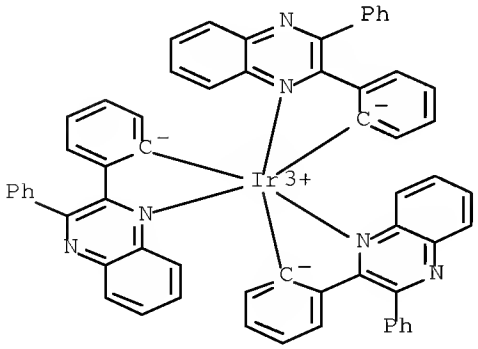
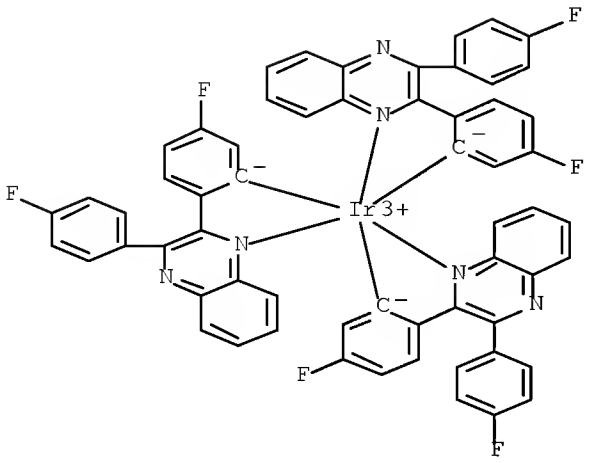


RN 863714-61-8 HCAPLUS
CN Iridium, tris[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)



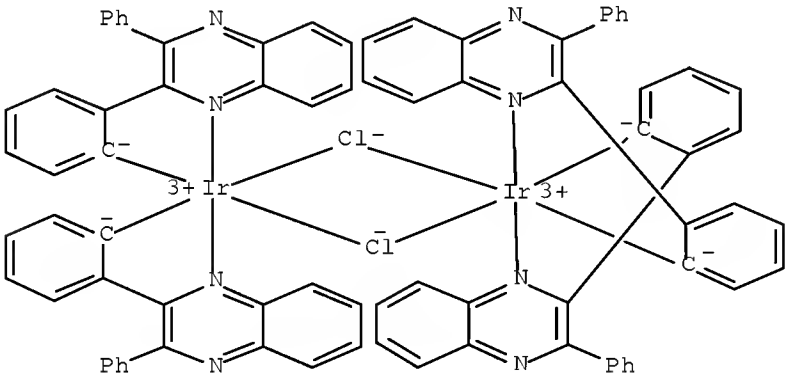
RN 863714-62-9 HCAPLUS
CN Iridium, tris[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]- (9CI) (CA INDEX NAME)



IT 848127-97-9P 848889-99-6P 863714-57-2P
863714-59-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)

RN 848127-97-9 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (CA INDEX NAME)



RN 848889-99-6 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (CA INDEX NAME)

PAGE 1-A

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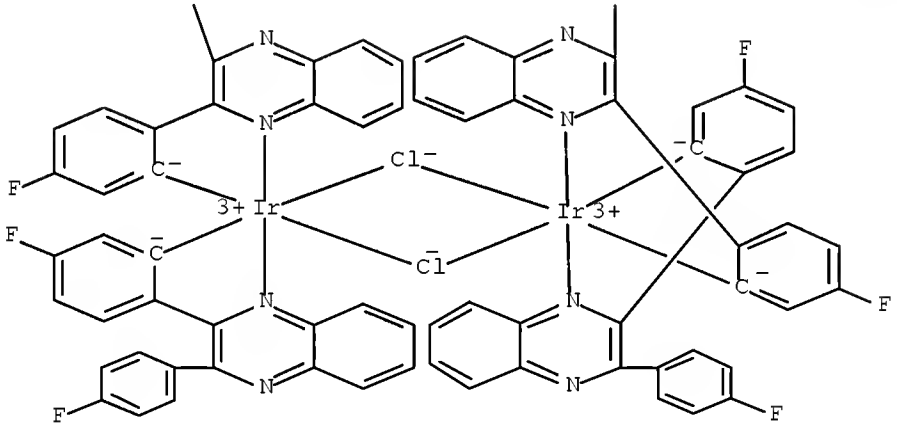
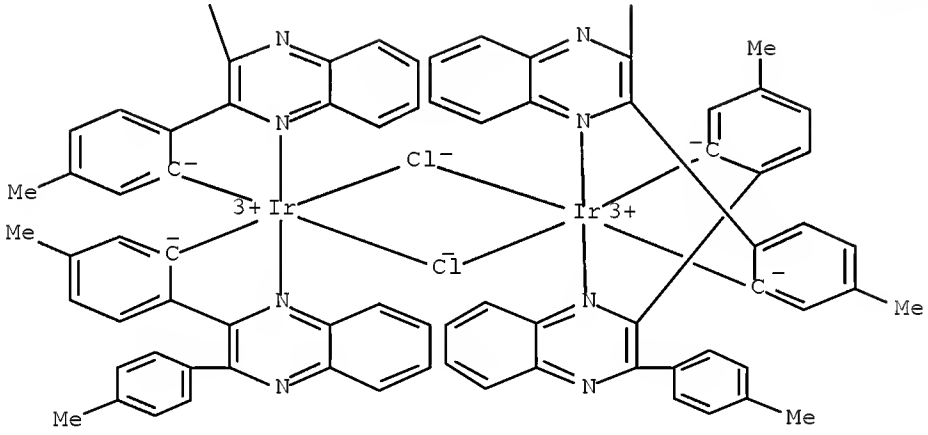


RN 863714-57-2 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[5-methyl-2-[3-(4-methylphenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



RN 863714-59-4 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[5-methoxy-2-[3-(4-methoxyphenyl)-2-quinoxalinyl-κN1]phenyl-κC]di- (9CI) (CA INDEX NAME)

PAGE 1-A

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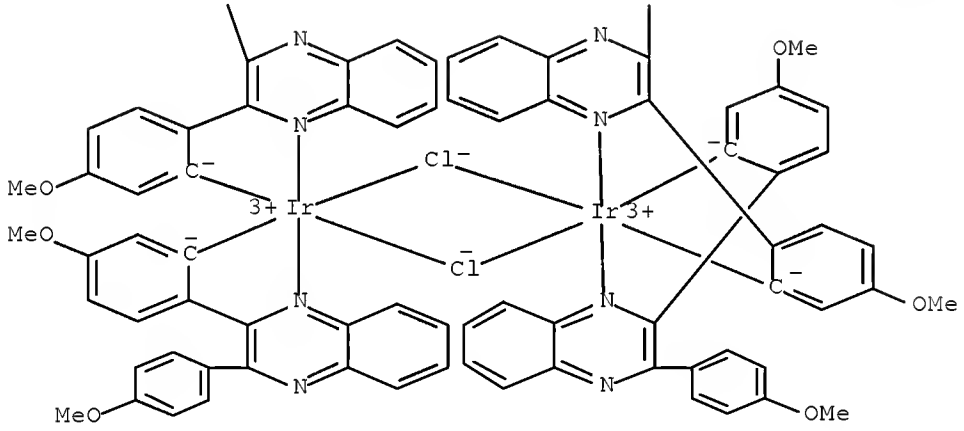

IC ICM B32B009-00
INCL 428917000; 428690000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29, 76
IT 848127-98-0P 853994-39-5P
RL: DEV (Device component use); MOA (Modifier or additive use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)
IT 863714-58-3P 863714-60-7P 863714-61-8P
863714-62-9P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)

IT 449-46-7P, 2-(4-Fluorophenyl)quinoxaline 1684-14-6P, 2,3-Diphenylquinoxaline 3719-84-4P 5021-43-2P, 2-Phenylquinoxaline 7248-16-0P, 2,3-Bis(4-methoxyphenyl)quinoxaline 36305-53-0P 148186-43-0P 810681-91-5P 810681-92-6P 810681-93-7P 810681-94-8P 810681-95-9P 810681-96-0P 810681-97-1P 810681-98-2P 810681-99-3P 810682-00-9P 848127-97-9P 848889-99-6P 863659-74-9P 863714-57-2P 863714-59-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(organometallic compds. containing quinoxaline structures and light-emitting elements using them)

L12 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:523471 HCAPLUS Full-text
DOCUMENT NUMBER: 143:68073
TITLE: Organic metal complex and light-emitting device employing it
INVENTOR(S): Inoue, Hideko; Seo, Satoshi; Shitagaki, Satoko; Abe, Hiroko
PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005054261	A1	20050616	WO 2004-JP18079	200411 29
			<--	
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1690866	A1	20060816	EP 2004-799935	200411 29
			<--	
R: DE, FR, GB, NL, FI				
JP 3810789	B2	20060816	JP 2005-516006	200411 29
			<--	
CN 1890255	A	20070103	CN 2004-80035633	200411 29

			<--	
US 20050242715	A1	20051103	US 2004-23043	200412 28
			<--	
US 7238806	B2	20070703		
US 20070213527	A1	20070913	US 2007-797532	200705 04
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PRIORITY APPLN. INFO.:			JP 2003-403822 A	200312 02
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			WO 2004-JP18079 W	200411 29
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			US 2004-23043 A3	200412 28
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OTHER SOURCE(S): MARPAT 143:68073

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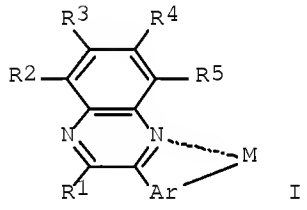


I

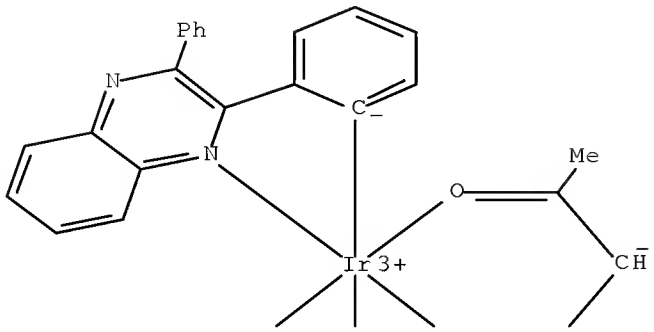
AB An organic metal complex is characterized by having a structure represented by the general formula (I) below. In the formula, R1-R5 resp. represent a hydrogen atom, a halogen element, an acyl group, an alkyl group, an alkoxyl group, an aryl group, a cyano group or a heterocyclic residue; Ar represents an aryl group having an electron-withdrawing substituent or a heterocyclic residue having an electron-withdrawing substituent; and M represents a group IX element or a group X element.

IT 848127-98-0P 953994-39-5P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic metal complex and light-emitting device employing it)

RN 848127-98-0 HCAPLUS

CN Iridium, (2,4-pentanedionato-κO,κO')bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A



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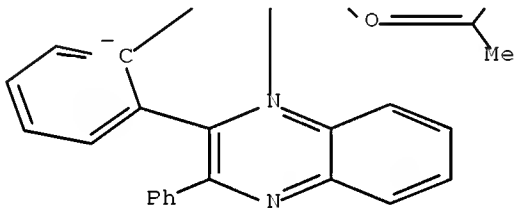
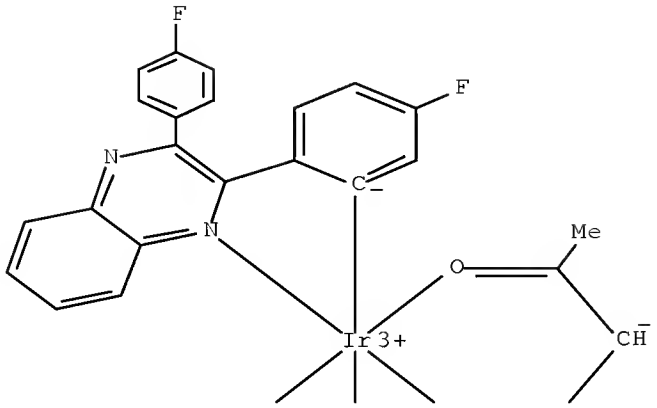


RN 853994-39-5 HCAPLUS
CN Iridium, bis[5-fluoro-2-[3-(4-fluorophenyl)-2-quinoxalinyl-κN1]phenyl-κC](2,4-pentanedionato-κO2,κO4)-
(CA INDEX NAME)

PAGE 1-A



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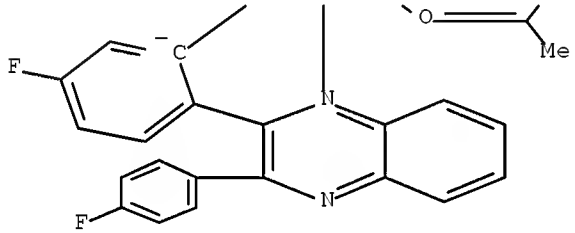


IC ICM C07F015-00
ICS C09K011-06; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29
IT 848127-98-0P 853994-39-5P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic metal complex and light-emitting device employing it)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:1044364 HCAPLUS Full-text
DOCUMENT NUMBER: 142:316925
TITLE: Synthesis and photoluminescence of a new red phosphorescent iridium(III) quinoxaline complex
AUTHOR(S): Zhang, Guo Lin; Liu, Ze Hua; Guo, Hai Qing
CORPORATE SOURCE: State Key Laboratory of Rare Earth Materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, Peop. Rep. China

SOURCE: Chinese Chemical Letters (2004), 15(11), 1349-1352
CODEN: CCLEE7; ISSN: 1001-8417
PUBLISHER: Chinese Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:316925

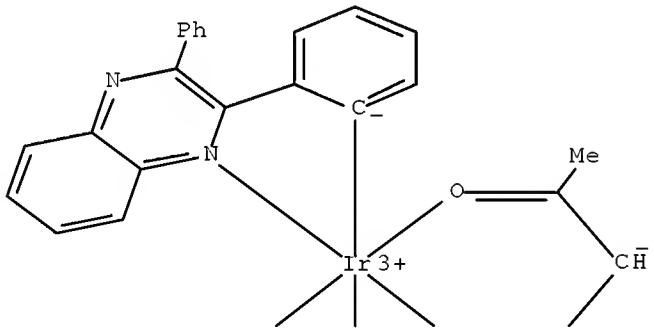
AB A new cyclometalated iridium(III) complex with the formula [Ir(DPQ)2(acac)] (DPQ = 2,3-diphenylquinoxaline; acac = acetylacetone) was prepared The structure of the complex was confirmed by elemental anal. (EA), 1H NMR, and mass spectroscopy (MS). The UV-vis absorption and photoluminescent properties of the complex were investigated.

IT 848127-98-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and photoluminescence of cyclometalated diphenylquinoxaline iridium acetylacetone complex)

RN 848127-98-0 HCAPLUS

CN Iridium, (2,4-pentanedionato-κO,κO')bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A



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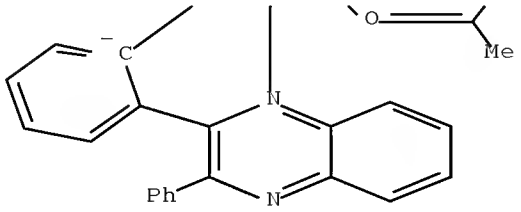
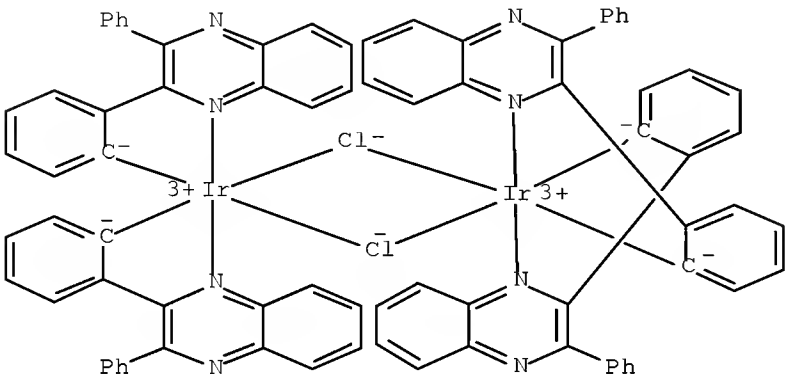


IT 848127-97-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

RACT (Reactant or reagent)
(synthesis and photoluminescence of cyclometalated diphenylquinoxaline iridium acetylacetone complex)

RN 848127-97-9 HCAPLUS

CN Iridium, di-μ-chlorotetrakis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (CA INDEX NAME)



CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 73

IT 848127-98-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and photoluminescence of cyclometalated diphenylquinoxaline iridium acetylacetone complex)

IT 1684-14-6P, 2,3-Diphenylquinoxaline 848127-97-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and photoluminescence of cyclometalated diphenylquinoxaline iridium acetylacetone complex)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:614376 HCAPLUS Full-text

DOCUMENT NUMBER: 133:321984

TITLE: Effects of the nature of the ligand environment and metal center on the optical and electrochemical properties of platinum(II) and palladium(II) ethylenediamine complexes with heterocyclic cyclometalated ligands

AUTHOR(S): Kulikova, M. V.; Balashev, K. P.; Kvam, P.-I.; Songstad, J.

CORPORATE SOURCE: Gertzen Russian State Pedagogical University, St. Petersburg, Russia

SOURCE: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii) (2000), 70(2), 163-170
CODEN: RJGCEK; ISSN: 1070-3632

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Mixed-ligand cyclometalated complexes [M(C.cxa.N)en]+ (M = Pt(II), Pd(II); C.cxa.N is a cyclometalating ligand on the basis of 2-(2'-thienyl)pyridine, 2-phenylpyridine, 2,6-diphenylpyridine, 2,3-diphenylpyrazine, 2,3-diphenylquinoxaline, and benzo(h)quinoline; en = ethylenediamine) were synthesized and characterized by 1H and 13C NMR, electron absorption and emission spectroscopy, and cyclic voltammetry. It was found that the LUMO is predominantly localized in the "N-imine" part of the (C.cxa.N) ligand and that the optical and electrochem. properties of the complexes are very sensitive to changes in this part of the ligand. "Mild" structural changes in the (C.cxa.N) ligands (introduction of various substituents) produce no such effect. The increase in the energy of the lowest excited state and the anodic shifts of the oxidation potentials of the complexes in going from palladium to platinum are explained in terms of enhanced stabilization of palladium 4d orbitals as compared to platinum 5d orbitals.

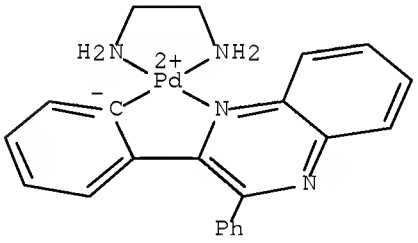
IT 303045-45-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; effects of nature of ligand environment and metal center on optical and electrochem. properties of platinum and palladium ethylenediamine complexes with heterocyclic cyclometalated ligands)

RN 303045-45-6 HCAPLUS

CN Palladium(1+), (1,2-ethanediamine-κN,κN')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]-, (SP-4-2)-, chloride, compd. with methanol (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 266352-74-3
CMF C22 H21 N4 Pd . Cl
CCI CCS



● Cl⁻

CM 2

CRN 67-56-1
CMF C H4 O

IT 266352-76-5P 303045-40-1P

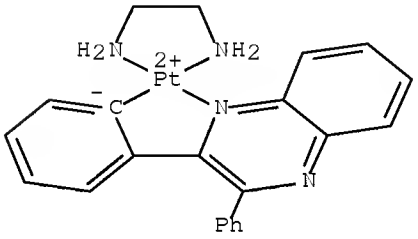
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(effects of nature of ligand environment and metal center on optical and electrochem. properties of platinum and palladium ethylenediamine complexes with heterocyclic cyclometalated ligands)

RN 266352-76-5 HCAPLUS

CN Platinum(1+), (1,2-ethanediamine-κN,κN')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]-, (SP-4-2)-, perchlorate (9CI) (CA INDEX NAME)

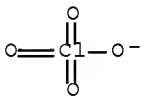
CM 1

CRN 266352-75-4
CMF C22 H21 N4 Pt
CCI CCS



CM 2

CRN 14797-73-0
CMF Cl O4

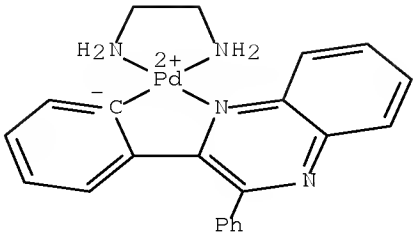


RN 303045-40-1 HCAPLUS

CN Palladium(1+), (1,2-ethanediamine-κN,κN')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]-, (SP-4-2)-, perchlorate (9CI) (CA INDEX NAME)

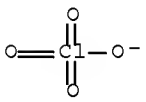
CM 1

CRN 303045-39-8
CMF C22 H21 N4 Pd
CCI CCS



CM 2

CRN 14797-73-0
CMF Cl O4



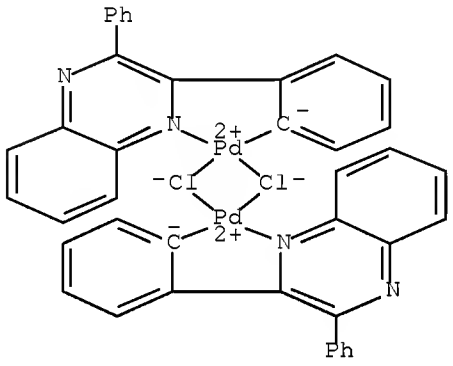
CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 72
IT 303045-45-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; effects of nature of ligand environment and metal center on optical and electrochem. properties of platinum and palladium ethylenediamine complexes with heterocyclic cyclometalated ligands)
IT 164533-54-4P 167647-75-8P 223732-46-5P 223732-48-7P
255837-37-7P 266352-76-5P 303045-26-3P 303045-34-3P
303045-36-5P 303045-40-1P 303045-42-3P 303045-44-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(effects of nature of ligand environment and metal center on optical and electrochem. properties of platinum and palladium ethylenediamine complexes with heterocyclic cyclometalated ligands)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:211471 HCAPLUS Full-text
DOCUMENT NUMBER: 132:321975
TITLE: Synthesis and properties of palladium(II) and platinum(II) (2,3-diphenylquinoxalinato-C,N)ethylenediamine complexes
AUTHOR(S): Balashev, K. P.; Kulikova, M. V.; Kvam, P.-I.; Songstad, J.
CORPORATE SOURCE: Gertzen Russian State Pedagogical University, St. Petersburg, Russia
SOURCE: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii) (

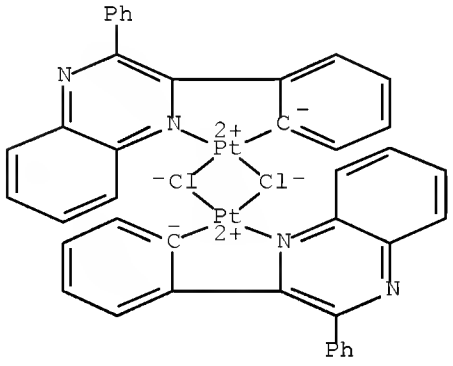
1999), 69(8), 1348-1349
CODEN: RJGCEK; ISSN: 1070-3632
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Palladium(II) and platinum(II) diphenylquinoxalinato complexes, [M(C-N)Cl]2 (I; M = Pt, Pd, C-N = deprotonated form of 2,3-diphenylquinoxaline) underwent ligand substitution reaction with ethylenediamine (en) to give [M(C-N)(en)]X (M = Pd, X = Cl; M = Pt, X = ClO4, resp.). I (M = Pt) was prepared from [PtCl4][NBu4] and HC-N in CH2Cl2 at 50°.

IT 266352-77-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(ligand substitution reaction with ethylenediamine)
RN 266352-77-6 HCAPLUS
CN Palladium, di-μ-chlorobis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (9CI) (CA INDEX NAME)



IT 266352-78-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ligand substitution reaction with ethylenediamine)
RN 266352-78-7 HCAPLUS
CN Platinum, di-μ-chlorobis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]di- (9CI) (CA INDEX NAME)

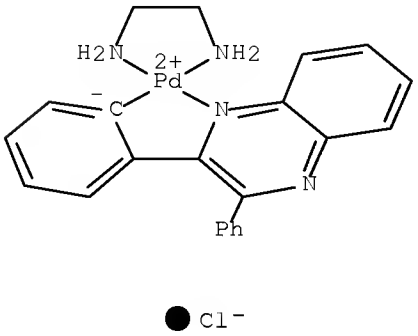


IT 266352-74-3P 266352-76-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 266352-74-3 HCAPLUS

CN Palladium(1+), (1,2-ethanediamine-κN,κN')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]-, chloride, (SP-4-2)- (9CI) (CA INDEX NAME)

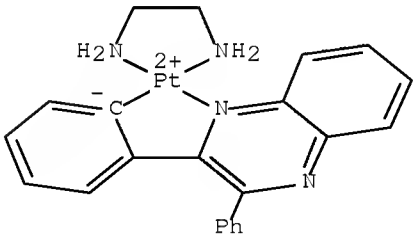


RN 266352-76-5 HCAPLUS

CN Platinum(1+), (1,2-ethanediamine-κN,κN')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]-, (SP-4-2)-, perchlorate (9CI) (CA INDEX NAME)

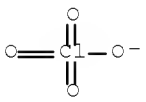
CM 1

CRN 266352-75-4
CMF C22 H21 N4 Pt
CCI CCS



CM 2

CRN 14797-73-0
CMF Cl O4



CC 29-13 (Organometallic and Organometalloidal Compounds)
IT 266352-77-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(ligand substitution reaction with ethylenediamine)
IT 266352-78-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ligand substitution reaction with ethylenediamine)
IT 266352-74-3P 266352-76-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

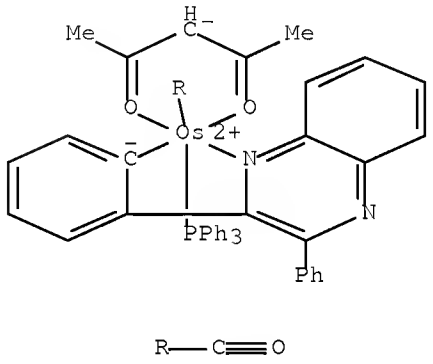
L12 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:200721 HCAPLUS Full-text
DOCUMENT NUMBER: 133:4789
TITLE: Bromination and nitration reactions of metallated (Ru and Os) multiaromatic ligands and crystal structures of selected products
AUTHOR(S): Clark, Alex M.; Rickard, Clifton E. F.; Roper, Warren R.; Wright, L. James
CORPORATE SOURCE: Department of Chemistry, The University of Auckland, Auckland, 92019, N. Z.
SOURCE: Journal of Organometallic Chemistry (2000), 598(2), j262-275
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 133:4789
AB Three N-containing aromatic heterocycles, 2-(1'-naphthyl)pyridine, 2-phenylquinoline, and 2,3-diphenylquinoxaline, were mercurated in the naphthyl or Ph ring 2-position and then symmetrized to form the Hg compds. Ar2Hg (Ar = Nppy (3), Phqn (1) or Dpqx (5), resp.). These reagents are suitable for trans-metalation and reaction with MHCl(CO)(PPh3)3 affords the complexes M(η2-C,N-Ar)Cl(CO)(PPh3)2, (6, M = Ru, Ar = Nppy; 7, M = Os, Ar = Nppy; 8, M = Ru, Ar = Phqn; 9, M = Os, Ar = Phqn; 10, M = Ru, Ar = Dpqx; 11, M = Os, Ar = Dpqx) in which each product features an aryl ligand that forms a strongly chelated five-membered ring through coordination of the heterocyclic N atom. The chloride ligand in each of the complexes 6-11 can be replaced by di-Me dithiocarbamate to give ultimately the mono-PPh3 complexes, M(η2-Ar)(η2-S2CNMe2)(CO)(PPh3) (12, M = Ru, Ar = Nppy; 13, M = Os, Ar = Nppy; 14, M = Ru, Ar = Phqn; 15, M = Os, Ar = Phqn; 16, M = Ru, Ar = Dpqx; 17, M = Os, Ar = Dpqx). Similarly, compound 10 when treated with Na(acac) gives Ru(η2-Dpqx)(η2- acac)(CO)(PPh3) (18), while treatment with HO2CCF3 gives Ru(η2-Dpqx)(O2CCF3)(CO)(PPh3)2 (19). Many of these complexes are very robust, making them suitable for electrophilic aromatic substitution reactions under harsh conditions. In each case, the presence of the metal had both an activating and a directing effect on the aryl ring to which it was bonded. Bromination or nitration reactions, both of which are not normally possible with organometallic substrates, were carried out successfully, giving rise to monobrominated or dinitrated products, resp. The following compds. were characterized, M(η2-Ar-4-Br)Cl(CO)(PPh3)2 (20, M = Ru, Ar = Phqn; 21, M = Os, Ar = Phqn; 22, M = Ru, Ar = Dpqx; 24, M = Os, Ar = Dpqx), M(η2-Dpqx-4-Br)(η2-S2CNMe2)(CO)(PPh3) (23, M = Ru; 25, M = Os), Os(η2-Ar)Cl(CO)(PPh3)2 (26, Ar =

Nppy-6,8-(NO2)2; 27, Ar = Phqn-4,6-(NO2)2). Crystal structures of compds. 7, 12, 15, 18, 19, 21, 23 and 25 were determined

IT 270252-38-5P 270252-39-6P 270252-44-3P
270252-46-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

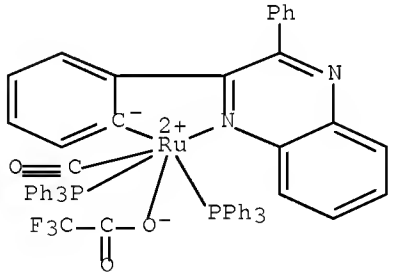
RN 270252-38-5 HCAPLUS

CN Osmium, carbonyl(2,4-pentanedionato-κO,κO')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC](triphenylphosphine)-, (OC-6-25)- (9CI) (CA INDEX NAME)



RN 270252-39-6 HCAPLUS

CN Ruthenium, carbonyl[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC](trifluoroacetato-κO)bis(triphenylphosphine)-, (OC-6-15)- (9CI) (CA INDEX NAME)

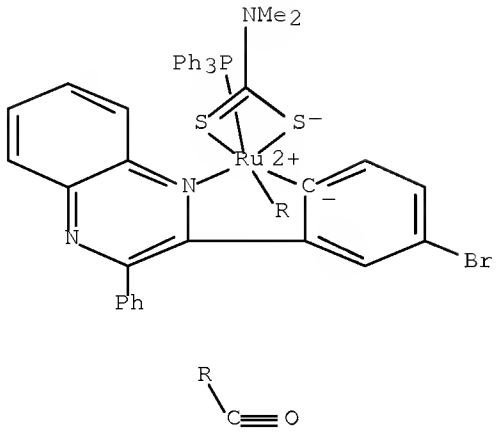


RN 270252-44-3 HCAPLUS

CN Ruthenium, [4-bromo-2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]carbonyl(dimethylcarbamodithioato-κS,κS')(triphenylphosphine)-, (OC-6-52)-, compd. with dichloromethane (1:1) (9CI) (CA INDEX NAME)

CM 1

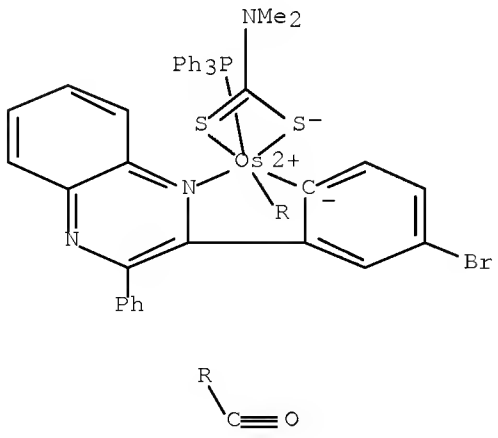
CRN 270252-43-2
CMF C42 H33 Br N3 O P Ru S2
CCI CCS



CM 2

CRN 75-09-2
CMF C H2 Cl2

RN 270252-46-5 HCAPLUS
CN Osmium, [4-bromo-2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]carbonyl(dimethylcarbamodithioato-κS,κS')(triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)

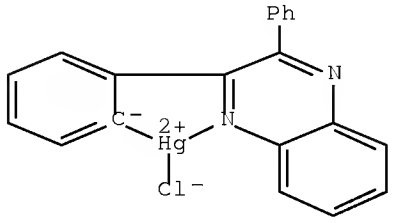


IT 270252-21-6P, (2-(3-Phenyl-2-quinoxalinyl)phenyl)mercury chloride
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and symmetrization of)

RN 270252-21-6 HCAPLUS

CN Mercury, chloro[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)



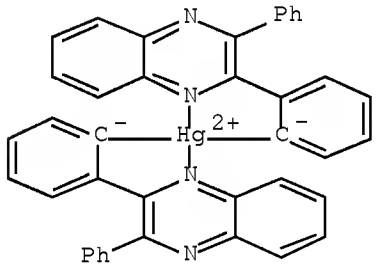
IT 270252-22-7P, Bis(2-(3-phenyl-2-quinoxalinyl)phenyl)mercury

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and transmetalation with osmium and ruthenium complexes)

RN 270252-22-7 HCAPLUS

CN Mercury, bis[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]- (9CI) (CA INDEX NAME)



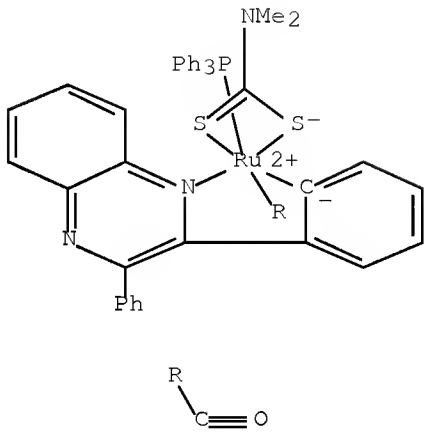
IT 270252-36-3P 270252-37-4P 270252-42-1P 270252-45-4P

RL: SPN (Synthetic preparation); PREP (Preparation)

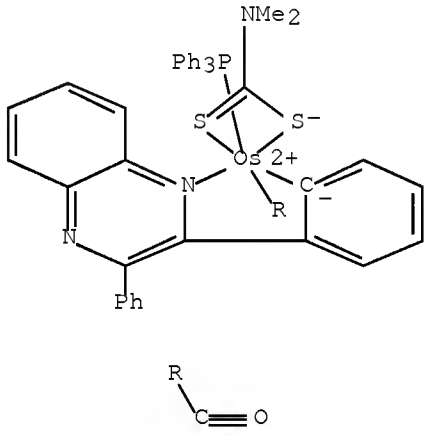
(preparation of)

RN 270252-36-3 HCAPLUS

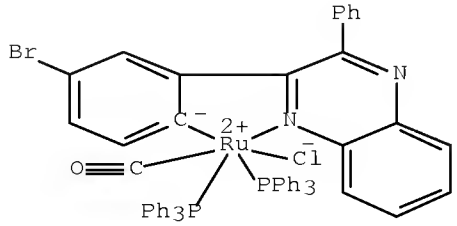
CN Ruthenium, carbonyl(dimethylcarbamodithioato-κS,κS')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC](triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)



RN 270252-37-4 HCAPLUS
CN Osmium, carbonyl(dimethylcarbamodithioato-κS,κS')[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC](triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)

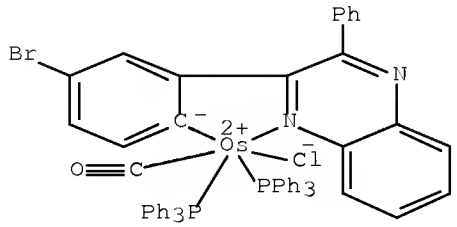


RN 270252-42-1 HCAPLUS
CN Ruthenium, [4-bromo-2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]carbonylchlorobis(triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)



RN 270252-45-4 HCAPLUS

CN Osmium, [4-bromo-2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]carbonylchlorobis(triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)



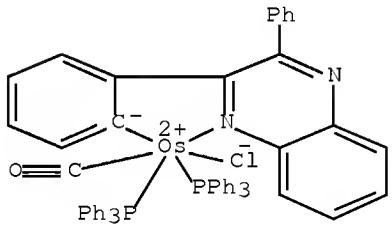
IT 270252-28-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation, coordinative metathesis with dithiocarbamate and ligand bromination)

RN 270252-28-3 HCAPLUS

CN Osmium, carbonylchloro[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]bis(triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)



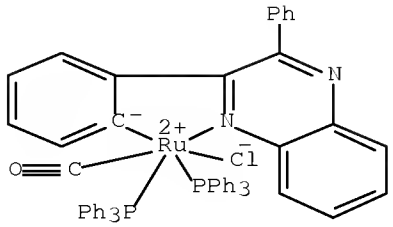
IT 270252-27-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation, coordinative metathesis with dithiocarbamate, coordinative condensation reactions with acetylacetone and trifluoroacetic acid and ligand bromination)

RN 270252-27-2 HCAPLUS

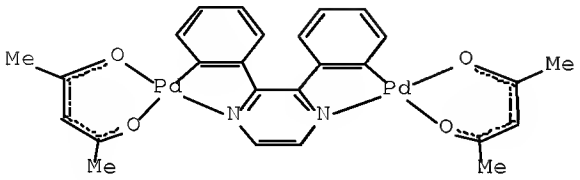
CN Ruthenium, carbonylchloro[2-(3-phenyl-2-quinoxalinyl-κN1)phenyl-κC]bis(triphenylphosphine)-, (OC-6-52)- (9CI) (CA INDEX NAME)



CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 75
IT 270252-29-4P 270252-34-1P 270252-38-5P
270252-39-6P 270252-44-3P 270252-46-5P
270252-49-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)
IT 119399-90-5P, 2-(2-Quinolinyl)phenylmercury chloride 270252-19-2P,
1-(2-Pyridinyl)-2-naphthylmercury chloride 270252-21-6P,
(2-(3-Phenyl-2-quinoxalinyl)phenyl)mercury chloride
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and symmetrization of)
IT 270252-18-1P, Bis(2-(2-quinolinyl)phenyl)mercury 270252-20-5P,
Bis(1-(2-pyridinyl)-2-naphthyl)mercury 270252-22-7P,
Bis(2-(3-phenyl-2-quinoxalinyl)phenyl)mercury
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and transmetalation with osmium and ruthenium complexes)
IT 270252-30-7P 270252-31-8P 270252-36-3P
270252-37-4P 270252-40-9P 270252-42-1P
270252-45-4P 270252-47-6P 270252-48-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 270252-25-0P 270252-28-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, coordinative metathesis with dithiocarbamate and ligand bromination)
IT 270252-27-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, coordinative metathesis with dithiocarbamate, coordinative condensation reactions with acetylacetone and trifluoroacetic acid and ligand bromination)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:62321 HCAPLUS Full-text
DOCUMENT NUMBER: 114:62321
ORIGINAL REFERENCE NO.: 114:10698h,10699a
TITLE: Cyclometalated compounds. V. Double cyclopalladation of diphenylpyrazines and related ligands
AUTHOR(S): Steel, Peter J.; Caygill, Graham B.

CORPORATE SOURCE: Chem. Dep., Univ. Canterbury, Christchurch, N. Z.
SOURCE: Journal of Organometallic Chemistry (1990), 395(3), 359-73
CODEN: JORCAI; ISSN: 0022-328X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 114:62321
GI

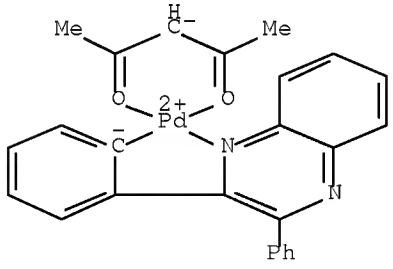


I

AB 2,3-Diphenylpyrazine and 4 structurally related ligands have each been singly and doubly cyclopalladated and the products characterized by 1H and 13C NMR studies of their acetylacetonate complexes. The structure of a doubly cyclometalated Pd(acac) complex (I) of 2,3-diphenylpyrazine has been determined by an x-ray diffraction study. A strong steric interaction between the 2 cyclopalladated Ph rings is relieved by twisting; the 2 chelate ring mean-planes are mutually inclined at an angle of 19.6(5)°.

IT 131259-91-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 131259-91-1 HCAPLUS
CN Palladium, (2,4-pentanedionato-O,O')[2-(3-phenyl-2-quinoxalinyl)phenyl]-, (SP-4-3)- (9CI) (CA INDEX NAME)

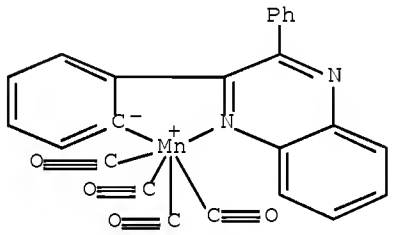


CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 75

IT 131259-88-6P 131259-90-0P 131259-91-1P 131259-92-2P
131259-93-3P 131259-94-4P 131259-95-5P 131259-96-6P
131259-97-7P 131612-44-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L12 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1975:579265 HCAPLUS Full-text
DOCUMENT NUMBER: 83:179265

ORIGINAL REFERENCE NO.: 83:28161a,28164a
TITLE: Cyclometallation reactions. XIII. Reactions of phenyl-substituted heterocyclic nitrogen-donor ligands
AUTHOR(S): Bruce, Michael I.; Goodall, Brian L.; Matsuda, Isamu
CORPORATE SOURCE: Dep. Inorg. Chem., Univ. Bristol, Bristol, UK
SOURCE: Australian Journal of Chemistry (1975), 28(6), 1259-64
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB The preparation of metalated complexes of Mn or Re derived from 2-phenylpyridine, 1,4-diphenylquinoxaline, 1-phenylpyrazole, 4-phenylpyrimidine, 1,4-diphenylphthalazine and 2,5-diphenyloxazole is described. Thus, heating 2-phenylpyridine with MnMe(CO)5 gave I.
IT 57522-13-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 57522-13-1 HCAPLUS
CN Manganese, tetracarbonyl[2-(3-phenyl-2-quinoxalinyl)phenyl]-, (OC-6-23)- (9CI) (CA INDEX NAME)



CC 29-11 (Organometallic and Organometalloidal Compounds)
IT 39046-05-4P 57522-10-8P 57522-11-9P 57522-12-0P
57522-13-1P 57522-14-2P 57522-15-3P 57522-16-4P
57539-32-9P 57583-97-8P 57593-72-3P 57607-62-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

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